

# 2003 FIRST Robotics Competition - Inspection Check List

Team No. \_\_\_\_\_

\$	Additional components:	Total Cost: \$ 3,500 max	\$ 400 / component max (USD)	PASS	
\$	Additional electronics:	Total Cost: \$ 200 max	\$ 100 / component max (USD)	Initials	
Size	Must fit freely in ready-to-run condition, w/o bumpers (30"x 36"x 60")			DATE	/ /
Weight ->	. #	Heaviest configuration with battery, bumpers, decorations (≤130.0#)		TIME	:
Alt. #1 ->	. #	Alt. #2 ->	. #	Alt. #3 ->	. #

## GENERAL

1	Team Name and/or logo and Team Number on 4 sides: 4" numerals; ½ " stroke; 4 sides (90 deg apart).	
2	Bumpers must be removable and meet size (extend max 4" horizontally on all sides and be located in the region 2" to 8" from the floor) and material constraints (no hard materials; if you can punch it and not hurt your hand, it's ok).	
3	Decorations must be non-functional (cannot affect outcome of match).	
4	Wheels or tracks do not damage or mark playing surfaces -> No metal cleats, Velcro or sandpaper on wheels or tracks!	
5	No tape used as a fastener. Only electrical tape acceptable as an electrical insulator. No Duct Tape.	
6	Tread penetration less than thickness of wire mesh.	<b>Notes or Comments:</b>
7	No sharp objects that could harm people or playing field.	
8	Maximum of 5' latex tubing allowed to launch containers.	
9	Springs only from 2003 kit, MSC or SPI.	
10	Stored energy sources less than 20 foot pounds each.	
11	No excess lubricants that could contaminate playing surfaces or robots.	
12	No loose wires or material to cause entanglement.	
13	Meets Restricted Parts List requirements (see back of sheet).	

## ELECTRICAL & CONTROLS

14	Only 1 battery on robot. <b>2003 issued battery.</b> Battery is secured and easily removable.
15	Battery terminals must be insulated (electrical tape acceptable).
16	120A Bussmann circuit breaker in series with battery (RED lead).
17	30A or 40A circuit breaker in series with each speed controller -> 40A on CIM and Drill; 30A on F-P, van door, and Globe.
18	20A circuit breaker on all remaining components, including window motor; or fuses of smaller value.
19	Drill, CIM, F-P, van door, and Globe motors on one Innovation First speed controller each.
20	No > 1 motor or air pump per Spike. 1 Spike may power pneumatic valves, fans, LED's; 1 Window Motor, Pump, Rotating Light.
21	No more than one motor per Victor 884 speed controller. <b>Verify Victor 884 (2003), not Victor 883 (2002).</b>
22	Motors, pump, rotating light, and valve must be wired to relay modules and not directly to breaker panels.
23	Sensors wired to Robot Controller sensor port or custom circuit board only (no series connections with motors, etc., except a current-measuring input on custom circuit).
24	Proper wire color for constant polarity power distribution (red/white for positive; black for negative).
25	#6 wire from Battery (+ and -) to Main Circuit Breaker to junction blocks on breaker panels.
26	#10 wire to speed controllers for CIM, Drill, van door, Globe, and F-P motors.
27	#16 wire to Robot Controller logic power, valves, window motors (on Speed Controllers), relay modules, pump, solenoids, large muffin fan, and rotating light. Custom circuit may connect to RC "Program Port."
28	#24 wire to switches, PWM cables, sensors, potentiometers, yaw rate sensor, small muffin fans, custom circuits, and LED's.
29	No exposed electrical conductors. No wires in electrical contact with robot metal chassis.
30	Proper use of electrical connectors and electrical tape (tight connections, proper attachment, proper insulation).
31	No fabricated terminal strips (off-the-shelf terminal strips allowed per Restricted Parts List).
32	Robot Controller LED's are visible. No illegal modification of control system components.
33	Team # set correctly on Robot Controller ( <b>power up RC via tether connection to check</b> ).
34	Rotating light must be on a relay that comes on/off when control system is enabled/disabled ( <b>power up RC to check</b> ).
35	Changeable rotating light (Red & Blue) easily accessible, 4 inches visible from 4 sides of robot, and mounted upright.

## PNEUMATICS

36	All pneumatics parts are same as 2003 Pneumatics Kit or from 2003 Custom Cylinder Order Form.
37	No modified pneumatics components or custom pneumatics components.
38	Pressure switch cannot be wired in series with the pump. It must go through a Spike Relay.
39	All air from compressor accumulator tanks (120 psi max) goes through 60 psi Norgren Regulator before any valves, etc.
40	Monnier Secondary Regulator after Norgren Primary Regulator. Gauges verify system Pressure. 120 psi Tanks; 60 psi System.
41	No more than 2 air accumulators, 2 double solenoids, 1 single solenoid, 4 air cylinders.
42	Suction Cup is off-the-shelf or made from Kit parts. Vacuum Source per Rules.